



Case Report

## Bicondylar Hoffa's Fracture: A Case Report

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### ABSTRACT

Bicondylar Hoffa fractures are rare. We are reporting a case of a bicondylar Hoffa's fracture after a high energy motor vehicle accident. We describe this injury in a 29 year old male who presented following a road traffic accident with a mode of injury similar to a dashboard injury, where in the patient was sitting in a bus when the bus met with an head on collision with a truck, and the patient sustained impact on his flexed knee. Radiographs and computed tomography revealed a coronal fracture involving both femoral condyles. The patient was treated using internal fixation with cancellous screws.

**Key words-** Bicondylar Hoffa's fracture. Femoral condyle. Bilateral approach. Dashboard

### INTRODUCTION

Condylar fractures of femur are rare and usually occur in a sagittal plane. Coronal plane fractures were first described by Albert Hoffa <sup>[1]</sup> in 1904 although they were acknowledged in the literature as early as 1869. While the literature reports these fractures in association with supracondylar or intercondylar distal femoral fractures; they are rare in isolation and increasingly rare with bicondylar involvement.

The patient was informed that the case would be reported and the consent was taken.

### CASE REPORT

A 29 year old male painter by occupation presented to the casualty with a history of road traffic accident. He was travelling in a bus which had a head on

collision with a truck, following which he sustained injury to his flexed knee, his knee had an impact with opposite seat. There were no significant associated injuries and the patient was haemodynamically stable. On examination there was a 2x2x1 cm cut lacerated wound over the anterior aspect of proximal tibia. The range of movement was restricted and there were no distal neurovascular deficits. Digital radiographs (Figure 1) revealed fracture of femoral condyles with coronal cut. A computed tomograph was done to know the extent of comminution (Figure 2), after which the diagnosis of bicondylar Hoffa fracture was established. At the time of injury patient was immobilised in an above knee slab after thorough debridement of the wound and was started empirically on cephalosporins.

The patient was operated in supine position under tourniquet and regional anaesthesia. Medial and lateral incision was made and the knee joint was exposed, on exposing the knee tangential fracture involving both condyles was noted. Reduction was achieved and was temporarily fixed with Kirschner wires, and later 4 6.5 mm cannulated cancellous were passed in postero anterior, lateral and oblique directions through the non-articular part under fluoroscopic control.(Figure 3) .The wound was closed in layers with a long knee brace applied. Post operatively quadriceps exercises were initiated and flexion extension at knee was started from day 10 onwards. Weight bearing was allowed after 4 weeks.

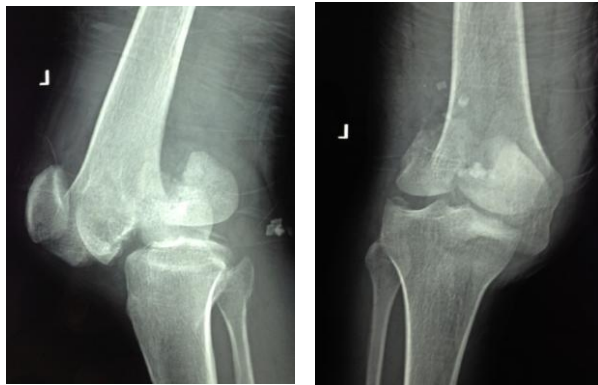


Figure1-Radiographs showing hoffas fracture.

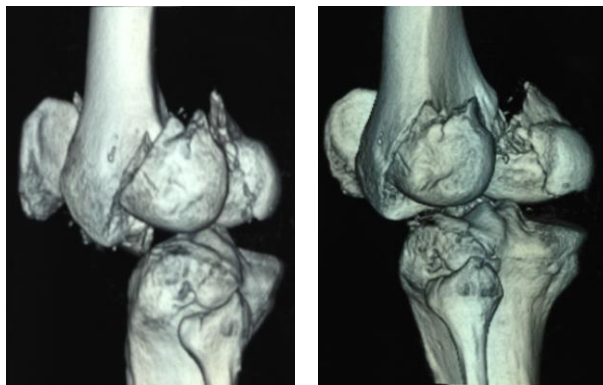


Figure 2-computed tomograph images showing fracture in coronal plane

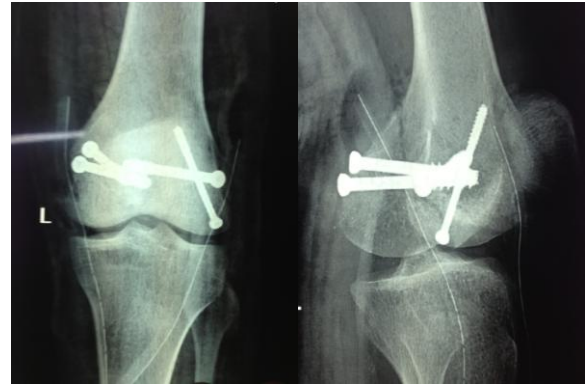


Figure 3-Radiograph showing internal fixation of fracture with cc screws

## RESULTS

Postoperatively weight bearing was initiated from 4<sup>th</sup> week onwards and follow up was done through telephone and hospital visits. We had achieved a flexion range upto 120 degree without any extension lag. The surgical site wounds had healed well and patient is satisfied with the treatment.

## DISCUSSION

Hoffa fractures are classified as type B3 fractures according to the AO/ASIF classification scheme. [2] Hoffa fracture usually results from high-velocity trauma following road-traffic accidents or fall from height. Though a shearing force to the posterior condyle has been postulated, both direct impact and vertical shear with twisting mechanisms have also been proposed and a single mechanism is not agreed upon. Because of the physiological genu valgum, the lateral femoral condyle is more likely to sustain a direct shearing force, and hence is more likely to get fractured. [3] The exact mechanism of injury of a bicondylar Hoffa fracture has not been described.

In one case report it was proposed that bicondylar Hoffa fracture occurs when the hyperflexed knee is subjected to posterior and upward directed force without any varus or valgus component and that the proximity of fracture line and its obliquity

depends on the degree of knee flexion at the time of impact. [4] Our patient had sustained an injury similar to dashboard injury probably without any valgus or varus component. Therefore the coronal shear force led to Bi-condylar Hoffa fracture.

Treatment of Bi condylar Hoffa fracture is essentially surgical. Non operative treatment in the form of plaster cast or skeletal traction leads to loss of extension, instability, joint contracture and deformity. Therefore anatomical reduction, stable fixation and early mobilisation should be the mode of treatment.

### CONCLUSION

In conclusion we described a rare case of Bi-condylar Hoffa fracture managed by open reduction and internal fixation for which we are still awaiting results as the patient is not mobilised yet. We feel that open reduction and internal fixation by a bilateral approach under direct vision is very

important for an accurate anatomic reduction. CT scan not only helps in defining the exact pattern of injury but also 3D Images of femoral condyles in the CT scan is valuable in surgical planning.

### REFERENCES

1. Hoffa A. Lehrbuch der Frakturen and Luxationen. Stuttgart: Verlag Von Ferdinand Enke;1904.p.451
2. Orthopaedic Trauma Association Committee for Coding and Classification. Fractures and dislocations compendium. J orthop Trauma 1996;10(Suppl) 41-5
3. Lewis SL, Pozo JL, Muirhead-Allwood WF, Coronal fractures of lateral femoral Condyle. J bone Joint Surg Br 1989;71:118-20
4. Ul Haq R, Modi P, Dhammi JK, Jain K, Mishra P. Conjoint bicondylar Hoffa Fracture in an adult. Indian J Orthop 2013;47:302-6

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